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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]

This invention about the cosmetics which blended the specific polyhydric alcohol denaturation silicone compound and the specific surface treatment granular material collectively more particularly, It excels in the dispersibility of a granular material, and dispersion stability and water repellence are good, there is nothing condensation of a granular material, and with nonuniformity, and skin familiarity is related with the using feeling improved gently and cosmetics excellent in makeup lasting property.

[0002]

[Description of the Prior Art]

Although various oils are conventionally used for cosmetics, in it, silicone oil is felt refreshed and does not have an oily feeling, and it is used in order to obtain water-repellent high cosmetics. . However, silicone oil is inferior to the badness and moistness of skin familiarity. In order to solve them faults, such as creaking, are indicated to be, various denaturation silicone, such as organopolysiloxane which introduced the alkyl group and the phenyl group, and organopolysiloxane with a polyoxyalkylene group, was marketed, but it was not yet satisfactory.

As what reforms the surface state of the granular material in cosmetics, metallic soap, Various surface treatments (for example, patent documents 1 and 2), such as higher fatty acid and oils processing, the method (for example, patent documents 3) of giving water repellence, or printing and processing methyl hydrogen polysiloxane in order to improve compatibility with silicone oil, etc. are known.

[0003]

[Patent documents 1]

JP,61-49285,B

[Patent documents 2]

JP,1-57084,B

[Patent documents 3]

JP,5-2644,B

[0004]

[Problem(s) to be Solved by the Invention]

However, in the former, since compatibility with silicone series oils was not good, it is

that a granular material condenses and there was a case where the difference of the appearance color of cosmetics and an application color arose, or problems, such as the Sumiya color unevenness which goes away by temporality, were produced. In the latter, the reaction in the powder surface was not enough and there was a case where a reaction advanced further temporally and hydrophobicity changed.

[0005]

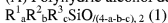
[Means for Solving the Problem]

In order that this invention persons may solve an aforementioned problem, as a result of inquiring wholeheartedly, it is blending a specific polyhydric alcohol denaturation silicone compound and a specific surface treatment granular material collectively, It excels in the dispersibility of a granular material, and it is good, there is nothing condensation of a granular material, and with nonuniformity, dispersion stability and water repellence find out that a using feeling which skin familiarity improves gently, and cosmetics excellent in makeup lasting property are obtained, and it came to complete this invention.

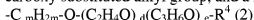
[0006]

That is, this invention is the following ingredient (A) and (B) :

(A) Polyhydric alcohol denaturation silicone shown with a following general formula (1)



[-- however, R¹ in a formula -- an alkyl group of the carbon numbers 1-30, an aryl group, an aralkyl group or a fluorine substituted alkyl group, an amino substituted alkyl group, a carboxy substituted alkyl group, and a following general formula (2)



Congener or an organic group of a different kind which comes out and is chosen from an organic group shown is shown (among a formula). An organic group and R⁵ R⁴ is indicated to be by a hydrocarbon group of the carbon numbers 4-30 or R⁵-(CO)- show a hydrocarbon group of the carbon numbers 1-30, and, as for an integer of 0<=m<=15, d, and e, m shows an integer of 0<=d<=50 and 0<=e<=50, respectively.

R² is a following general formula (3).

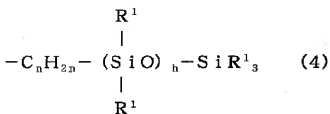


It is come out and shown (Q shows among a formula a hydrocarbon group of bivalence of the carbon numbers 3-20 which may contain either [at least] an ether bond or an ester bond, and X shows a polyhydric alcohol substitution hydrocarbon group which has at least two hydroxyl groups.),

R³ is a following general formula (4).

[0007]

[Formula 2]



[0008]

It comes out, the ORGANO siloxane expressed is shown (among a formula, R^1 is the same as that of the above, n shows the integer of $1 \leq n \leq 5$, and h shows the integer of $0 \leq h \leq 500$), and a , b , and c show $1.0 \leq a \leq 2.5$, $0.001 \leq b \leq 1.5$, and $0.001 \leq c \leq 1.5$, respectively.]

(B) The surface treatment granular material which made the finishing agent the compound which used as the reactant group the organosilane or organosilanol which has at least one or more chlorine atoms and alkoxy groups, an acyloxy group, an amino group, a cyano group, and an isocyanate group, and the powder surface was made to combine in a molecule

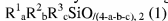
They are the cosmetics containing **.

Hereafter, this invention is explained in detail.

[0009]

[Embodiment of the Invention]

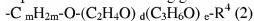
The polyhydric alcohol denaturation silicone of the ingredient (A) used for this invention is shown by the following general formula (1).



As an example of R^1 , a methyl group, an ethyl group, a propyl group, A butyl group, a pentyl group, a hexyl group, a heptyl group, an octyl group, a nonyl group, A decyl group, an undecyl group, the dodecyl, a tridecyl group, a tetradecyl group, Alkyl groups, such as a hexadecyl group, an octadecyl group, and an eicosyl group, a cyclopentyl group, Fluorine substituted alkyl groups, such as aralkyl groups, such as aryl groups, such as cycloalkyl groups, such as a cyclohexyl group, a phenyl group, and a tolyl group, benzyl, and a phenethyl group, a triphenylpropyl group, and a heptadecafluoro decyl group, 3-aminopropyl, 3 - [(2-aminoethyl) Amino] Carboxy substituted alkyl groups, such as amino substituted alkyl groups, such as a propyl group, and a 3-carboxypropyl group, etc. are mentioned.

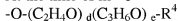
[0010]

A part of R^1 is a following general formula (2).



It may be an organic group come out of and expressed. R^4 is a hydrocarbon group of the carbon numbers 4-30, or an organic group shown by $R^5 - (CO) -$, and R^5 is a hydrocarbon group of the carbon numbers 1-30 here. The integer of $0 \leq m \leq 15$, d , and e of m are the integers of $0 \leq d \leq 50$ and $0 \leq e \leq 50$, respectively. A part of this R^1 is alcohol residue or alkenyl addition type residue, and it is as an example,

At the time of $m=0$



If it is $d=0$ and $e=0$, in this case, the alkoxy group of the carbon numbers 4-30, For example, cetyl alcohol from lower alkoxy groups, such as a butoxy group, oleyl alcohol, me, such as stearyl alcohol, -- high-class alkoxy groups, such as an yloxy group and a steer ROKISHI group, are mentioned, or fatty acid residue, such as acetic acid, lactic acid, butanoic acid, oleic acid, stearic acid, and behenic acid, is mentioned. If it is $d > 1$ and $e > 1$, it will become the alcohol residue of the alkylene oxide adduct (an end is a hydroxyl group) of higher alcohol.

Especially in the case of $m > 1$ and $d=e=0$, 3, 5, or 11 is [d] preferred, In this case, it is allyl ether, pentenyl ether, and undecenyl ether residue, and for example, allyl stearyl ether residue, pentenyl behenyl ether residue, undecenyl oleyl ether residue, etc. are

mentioned by the substituent of R^4 . When there is not d or e 0, an alkoxy group and an ester group will exist via polyoxyalkylene. It is desirable that it is 3-5 since **** is strong as whatever d and the e it may be inferior to hydrolysis resistance here when it is m=0, and d is 15 or more. In particular, it is desirable for not less than 50% of the whole R^1 to be a methyl group, and it can call it 100%.

[0011]

R^2 is a following general formula (3).

-Q-O-X (3)

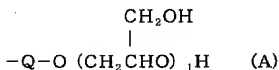
Come out, and it is expressed and Q shows here the bivalence hydrocarbon group of the carbon numbers 3-20 which may contain an ether bond and an ester bond, $(CH_2)_2$ -, $(CH_2)_3$ -, $-CH_2CH(CH_3)CH_2$ -, $-(CH_2)_4$ -, $(CH_2)_6$ -, $-(CH_2)_7$ -, $(CH_2)_8$ -, $-(CH_2)_2-CH(CH_2CH_2CH_3)$ -, $-CH_2-CH(CH_2CH_3)$ -, $-(CH_2)_3-O-(CH_2)_2$ -, $(CH_2)_3-O-(CH_2)_2-O-(CH_2)_2$ -, $-(CH_2)_3-O-CH_2CH(CH_3)$ -, $-CH_2-CH(CH_3)-COO(CH_2)_2$ -, etc. can be illustrated. X is a polyhydric alcohol substitution hydrocarbon group which has at least two hydroxyl groups, and is a hydrocarbon group preferably chosen from glycerin and a sugar derivative.

[0012]

As glycerin, the compound shown in following general formula (A) - (C) is mentioned.

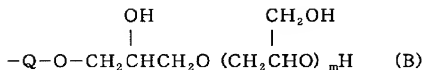
[0013]

[Formula 3]



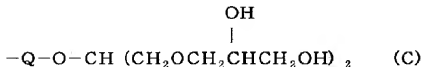
[0014]

[Formula 4]



[0015]

[Formula 5]



[0016]

Here, Q in formula (A) - (C) is the same as that of Q in a general formula (3), and l and m are the integers of 1-20. Some hydroxyl groups in the above-mentioned compound may

be replaced by the alkoxy group or the ester group.

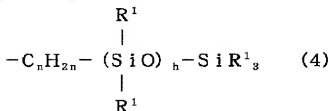
As sugar residue derived from a monosaccharide, oligosaccharide, or a polysaccharide, For example, a glucosyl group, a MANNOSHIRU group, a galactosyl group, a ribosyl group, Polysaccharide groups, such as oligosaccharide groups, such as monosaccharide groups, such as an arabino sill group, a xylo sill group, and the Fulk tosyl group, a malto sill, a cello BIOSHIRU group, a lactosyl group, and a malto trio sill group, cellulose, and starch, are illustrated, and a monosaccharide group and an oligosaccharide group are mentioned as a desirable basis.

[0017]

R³ is a following general formula (4).

[0018]

[Formula 6]



[0019]

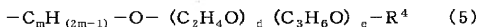
It is a silicone compound come out of and expressed. Here, h is 0-500 and is an integer of 1-50 preferably. n is an integer of 1-5, and n is 2 when compounding from the reaction of a vinyl group and a hydrogen siloxane especially. If h is larger than 500, problems, like reactivity with the hydrogen siloxane of a main chain worsens may arise. The silicone compound of the above-mentioned general formula (4) can compound a piece end vinyl siloxane a equilibration reaction with divinyl tetramethyl disiloxane, hexamethyl disiloxane, and octamethylcyclotetrasiloxane by a publicly known method. The silicone compound which raised the Kata end blockade rate by the ring-opening-polymerization method of the hexamethyl cyclotrisiloxane by 5 coordination silicon complex compound catalyst or an anionic polymerization catalyst is compoundable.

[0020]

Polyhydric alcohol denaturation silicone of the above-mentioned general formula (1) used by this invention, The ORGANO hydrogen polysiloxane A polyoxyalkylene compound expressed with a following general formula (5), If the addition reaction of a silicone compound expressed with a following general formula (6) and the organic compound further expressed with an alkylene compound and/or a following general formula (7) depending on the case is carried out under existence of a platinum catalyst or a rhodium catalyst, it can be boiled, and it can be compounded more easily.

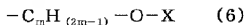
[0021]

[Formula 7]



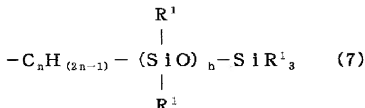
[0022]

[Formula 8]



[0023]

[Formula 9]



[0024]

(However, R¹ in a formula, R⁴, X, d, e, h, m, and n are the same as the above respectively.)

Here, although straight chain shape and annular any may be sufficient as an ORGANO hydrogen polysiloxane, an addition reaction is advanced smoothly and also it is preferred also from from that it is straight chain shape.

A polyol compound expressed in the above-mentioned general formula (6) as the ORGANO hydrogen polysiloxane, a mole ratio of a terminal unsaturated group [as opposed to 1 mol of SiH groups in the mixing ratio of the sum total with a compound expressed with a silicone compound expressed with the above-mentioned general formula (7) and an alkylene compound, and/or the above-mentioned general formula (5)] -- 0.5-2.0 -- it is 0.8-1.2 preferably.

As for the above-mentioned addition reaction, it is desirable to carry out under existence of a platinum catalyst or a rhodium catalyst, and its catalyst of chloroplatinic acid, a denaturing alcohol platinum chloride, and a chloroplatinic acid-vinyl siloxane complex is specifically preferred. 50 ppm or less are 20 ppm or less especially preferably in platinum or the amount of rhodium.

[0025]

Composition of polyhydric alcohol denaturation silicone of an ingredient (A) used by this invention may be performed in an organic solvent if needed. For example, fatty alcohol, such as methanol, ethanol, 2-propanol, and butanol, Although halogenated hydrocarbon, such as aliphatic series, such as aromatic hydrocarbon, such as toluene and xylene, n-pentane, n-hexane, and cyclohexane, or alicyclic hydrocarbon, dichloromethane, chloroform, and a carbon tetrachloride, etc. are mentioned, Although addition reaction conditions in particular are not limited, it is preferred to make it react under flowing back for 1 to 10 hours.

a -- 1.0-2.5 -- it is 1.2-2.3 preferably. When a is smaller than 1.0, it is inferior to compatibility with oils, and if larger than 2.5, it will become lacking in hydrophilic nature. b -- 0.001-1.5 -- it is 0.05-1.0 preferably. If b is smaller than 0.001, it will become lacking in hydrophilic nature, and if larger than 1.5, hydrophilic nature will become high

too much. $c \sim 0.001-1.5$ -- it is 0.05-1.0 preferably. When c is smaller than 0.001, it is inferior to compatibility with silicone oil, and if it becomes larger than 1.5, it will become lacking in hydrophilic nature.

Although weight average molecular weight in particular of polyhydric alcohol denaturation silicone of an ingredient (A) used by this invention is not limited, 500-200000 are 1000-100000 desirable still more preferably.

[0026]

loadings of polyhydric alcohol denaturation silicone of an ingredient (A) used by this invention become a gestalt of cosmetics, and differ -- usually -- 0.01 - 40 mass % (it is only hereafter described as "%") -- they are 0 and 1 to 30% preferably. If there are too few loadings of polyhydric alcohol denaturation silicone of this invention than the above-mentioned range, an effect will not be acquired, but if too large, stickiness will arise, or usability becomes heavy. moreover -- these polyhydric alcohol denaturation silicone accepts necessity -- a kind -- or two or more sorts can be used.

[0027]

In a molecule of an ingredient (B) used by this invention, at least one or more chlorine atoms and alkoxy groups, A compound which used as a reactant group an organosilane or organosilanol which has an acyloxy group, an amino group, a cyano group, and an isocyanate group is made into a finishing agent, As a reactant group of a processing agent of a surface treatment granular material combined with a powder surface, although organochlorosilane, organoalkoxysilane, an ORGANO acyloxy silane, the ORGANO aminosilane and a silazane, and organosilanol are mentioned, Adsorptivity to a powder surface is good also in it, a surface treatment is possible by a simple method, and especially a thing in which a feel of a processing granular material has organoalkoxysilanes, such as good methoxysilane and an ethoxysilane, and propoxysilane, is preferred.

[0028]

Specifically Alkyltrialkoxysilane, such as a TORIETOKI SHIKAPURIRIRU silane and a trimethoxy KAPURIRIRU silane, Perfluoro octyl ethyltriethoxysilane, perfluoro octyl ethyltrimethoxysilane, Perfluoroalkyl trialkoxysilane, such as perfluoro octyl triethoxysilane, doria, such as PAFURUOROKAPURIRIRU triethoxy silyl ethyl methicone, triethoxy silyl ethyl dimethicone / methicone copolymer (KF-9907; made by Shin-Etsu Chemical Co., Ltd.), -- RUKOKISHI silyl denaturation organopolysiloxane. Triethoxy silyl ethyl polydimethylsiloxethyl dimethicone (KF-9908; made by Shin-Etsu Chemical Co., Ltd.), doria, such as triethoxy silyl ECHIRUPORIJIMECHIRU siloxy ethylhexyl dimethicone (KF-9909; made by Shin-Etsu Chemical Co., Ltd.), -- RUKOKISHI silyl denaturation silicone branch-type organopolysiloxane. Triethoxy silyl denaturation acrylic silicone graft copolymers, such as AKURIRETSU / tridecyl acrylate / triethoxy silyl propyl methacrylate / dimethicone methacrylate copolymer (KP-574; made by Shin-Etsu Chemical Co., Ltd.), etc. are mentioned. these processing agents -- a kind -- or two or more sorts can be used.

[0029]

Although limitation in particular is not carried out as a manufacturing method of a surface treatment granular material of an ingredient (B) used by this invention, it is carried out by a method of the conventional known. In the case of a processing agent containing an organosilane group or a silanol group, a powder surface is processed

directly by this processing agent, and, specifically, a processing granular material is prepared. This processing agent and a granular material are mixed in a solvent [this processing] which this processing agent distributes [the dissolution or], Methods, such as wet process dried, heat-treated and ground after processing agitation treatment or a ball mill, a bead mill, roll mill processing, etc., and a dry method which performs desiccation and heat treatment after processing which carries out the spray of what was diluted to this processing agent simple substance or a solvent to a granular material at a granular material, or a stirring mixing process, are adopted. As the above-mentioned solvent, although limitation in particular is not carried out, an ether system, a ketone system, halogenated hydrocarbon, aliphatic hydrocarbon, alcohols, or water is mentioned, for example. A catalyst for promoting these reactions may be added.

[0030]

As a granular material used for a surface treatment granular material of an ingredient (B) used by this invention, although limitation in particular is not carried out, if it is what is used for the usual cosmetics -- shape (a globular shape.) Anything can be used regardless of a needle, tabular, etc. particle diameter (the shape of haze, particles, the paints class, etc.), and particulate structures (porosity, quality of nonporous, etc.), for example, inorganic powder, an organic granular material, a surface-active agent metal salt granular material, a colored pigment, a pearl pigment, metal powder paints, natural coloring matter, etc. are raised.

[0031]

As inorganic powder, specifically Titanium oxide, zirconium oxide, a zinc oxide, Cerium oxide, magnesium oxide, barium sulfate, calcium sulfate, Magnesium sulfate, calcium carbonate, magnesium carbonate, talc, mica, Kaolin, a sericite, white mica, synthetic mica, phlogopite, lepidolite, black mica, Lithia mica, silicic acid, a silicic acid anhydride, aluminum silicate, a magnesium silicate, Magnesium aluminum silicate, a calcium silicate, silicic acid barium, Silicic acid strontium, tungstic acid metal salt, hydroxyapatite, They are a vermiculite, a HAJI light, bentonite, montmorillonite, hectorite, zeolite, ceramic powder, calcium diphosphate, alumina, aluminium hydroxide, boron nitride, boron nitride, silica, etc.

[0032]

As an organic granular material, polyamide powder, polyester powder, polyethylene powder, Polypropylene powder, polystyrene powder, polyurethane, benzoguanamine powder, Polymethyl benzoguanamine powder, tetrafluoroethylene powder, Polymethylmethacrylate powder, cellulose, silk powder, Nylon powder, 12 nylon, 6 nylon, silicone powder, A styrene acrylic acid copolymer, a divinylbenzene styrene copolymer, Polyvinyl resin, urea resin, phenol resin, a fluoro-resin, silicone resin, An acrylic resin, melamine resin, an epoxy resin, polycarbonate resin, a micro crystallite textiles granular material, rice starch, lauroyl lysine, etc.; as a surface-active agent metal salt granular material (metallic soap), Zinc stearate, aluminum stearate, calcium stearate, Magnesium stearate, myristic acid zinc, myristic acid magnesium, cetyl-ether-phosphate zinc, cetyl-ether-phosphate calcium, cetyl-ether-phosphate zinc sodium, etc.; as a colored pigment, Inorganic yellow system paints, such as inorganic brown system paints, such as an inorganic red pigment of iron oxide, iron hydroxide, and titanic acid iron, and gamma-iron oxide, yellow oxide of iron, and ocher, black oxide of iron, Inorganic purple paints, such as inorganic black pigments, such as carbon black, manganese violet, and cobalt

violet, They are what rake-ized inorganic blue system paints, such as inorganic green pigments, such as chromium hydroxide, chrome oxide, cobalt oxide, and titanic acid cobalt, Prussian blue, and ultramarine, and tar system coloring matter, a thing which rake-ized natural coloring matter, the composite powder which composite-ized these granular materials, etc.

[0033]

As a pearl pigment, titanium oxide covering mica, titanium oxide covering mica, Bismuth oxychloride, titanium oxide covering bismuth oxychloride, titanium oxide covering talc, fish scale foil, titanium oxide covering coloring mica, etc.; as metal powder paints, Aluminum powder, kappa powder, stainless steel powder, etc.; as tar dye, The red No. 3, the red No. 104, the red No. 106, the red No. 201, the red No. 202, The red No. 204, the red No. 205, the red No. 220, the red No. 226, the red No. 227, The red No. 228, the red No. 230, the red No. 401, the red No. 505, the yellow No. 4, The yellow No. 5, the yellow No. 202, the yellow No. 203, the yellow No. 204, the yellow No. 401. The blue No. 1, the blue No. 2, the blue No. 201, the blue No. 404, the green No. 3, the green No. 201, The green No. 204, the green No. 205, the orange No. 201, the orange No. 203, the orange No. 204, the orange No. 206, orange No. 207, etc.; as natural coloring matter, a granular material chosen from carminic acid, a laccainic acid, cull SAMIN, brazilin, crocin, etc. is mentioned.

[0034]

although quantity of this processing agent used for a specific surface treatment granular material of an ingredient (B) used by this invention changes with kinds of granular material, kinds of processing agent, and disposal methods to be used and it is not limited in particular -- desirable -- 0.1- of a granular material -- it is 0.3 to 10% more preferably 20%. A finishing agent has combined with a powder surface firmly, and a specific surface treatment granular material of an ingredient (B) used by this invention has outstanding dispersibility, dispersion stability, and a water-repellent and good using feeling.

[0035]

A specific surface treatment granular material of an ingredient (B) used by this invention becomes a gestalt of cosmetics, differ, and are usually 0.1 to 95% preferably 0.01 to 99%. A good thing is obtained [in / on this range and / in loadings / a using feeling and usability]. moreover -- these specific surface treatment granular materials accept necessity -- a kind -- or two sorts can be used.

[0036]

An ingredient used for the usual cosmetics in the range which does not bar an effect of this invention in cosmetics of this invention, Oils, a moisturizer, a surface-active agent, a granular material, coloring matter, lower alcohol, an ultraviolet ray absorbent, An antiseptic, an antimicrobial agent, perfume, an antioxidant, a pH adjuster, a chelating agent, a pick-me-up, ingredients for lustrous skin (a whitening agent, a cell activator, an anti-inflammatory agent, a circulation accelerator, a skin astringent, an antiseborrheic drug, etc.), vitamins, nucleic acid, hormone, a clathrate, etc. can be added.

[0037]

As cosmetics of this invention, a milky lotion, cream, an essence, a makeup oil, a lip cream, Skin care cosmetics, such as a hand cream and a facial wash, foundation, A makeup ground, cheek red, eye shadow, mascara, an eyeliner, Cosmetics for hair, such as

charges of face make up, such as an eyebrow, an overcoat agent, and a lip stick, hair cream, a shampoo, rinse, KONDESHONA, and a charge for a haircut, etc. are mentioned, and the pharmaceutical form can choose suitably gestalten, such as a liquid, the shape of a milky lotion, a solid state, paste state, and gel.

Cosmetics of this invention are manufactured by a method of manufacturing the usual cosmetics, and the process is not limited.

[0038]

[Example]

Although the example to which a synthetic example and it were applied about this invention is given and described hereafter, this invention is not limited at all by these. In a following composition formula, it is a Me_3SiO basis (.). Or it writes M^{R} and D^{R} [the unit which wrote "D", wrote "H", and denaturalized the Me_3Si group (Me shows a methyl group) by the substituent of either M or D]. [an "M" Me_2SiO basis] [a HMeSiO basis]

[0039]

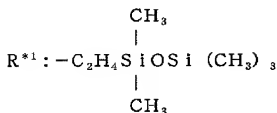
Synthetic example 1 polyhydric-alcohol denaturation silicone 1

282 g of methyl hydrogen polysiloxane expressed with a reactor by average composition formula M_2H_2 was taught, the mixture of the toluene solution 0.1g of 174 g of pentamethylvinyl disiloxane and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained. 210g, 210g of isopropyl alcohol (it is indicated as the following IPA), and 0.1g of IPA solutions of chloroplatinic acid 0.5 mass % were taught to another reactor for diglycerol monoallyl ether, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 1 expressed with average composition formula $\text{M}_2\text{D}^{\text{R}^1}\text{D}^{\text{R}^2}$ was obtained.

$\text{R}^{\ast 1}$ and $\text{R}^{\ast 2}$ are shown below among a formula.

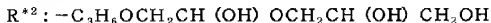
[0040]

[Formula 10]



[0041]

[Formula 11]



[0042]

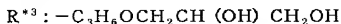
Synthetic example 2 polyhydric-alcohol denaturation silicone 2

120 g of methyl hydrogen polysiloxane expressed with a reactor by average composition formula H_4 was taught, the mixture of the toluene solution 0.1g of 180 g of

pentamethylvinyl disiloxane and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained. 0.1g of IPA solutions of 140g, IPA210g, and chloroplatinic acid 0.5 mass % were taught to another reactor for glycerin monoallyl ether, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 2 expressed with average composition formula $D^{R^{*1}}_2D^{R^{*3}}_2$ was obtained. inside of formula, and R^{*1} -- the above -- the same -- R^{*3} is shown below.

[0043]

[Formula 12]



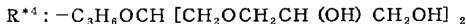
[0044]

Synthetic example 3 polyhydric-alcohol denaturation silicone 3

320 g of methyl hydrogen polysiloxane expressed with a reactor by average composition formula M_2H_8 was taught, the mixture of the toluene solution 0.1g of 260 g of pentamethylvinyl disiloxane and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained. 0.3g of IPA solutions of 750g, IPA750g, and chloroplatinic acid 0.5 mass % were taught to another reactor for triglycerol monoallyl ether, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 3 expressed with average composition formula $M_2D^{R^{*1}}_3D^{R^{*4}}_5$ was obtained. inside of formula, and R^{*1} -- the above -- the same -- R^{*4} is shown below.

[0045]

[Formula 13]



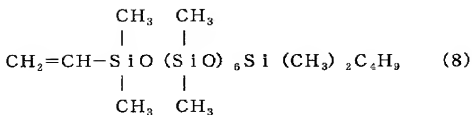
[0046]

Synthetic example 4 polyhydric-alcohol denaturation silicone 4

214 g of methyl hydrogen polysiloxane expressed with a reactor by average composition formula M_2H_8 is taught, The mixture of the toluene solution 0.2g of 714 g of organopolysiloxane shown in the following average composition formula (8) and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained.

[0047]

[Formula 14]



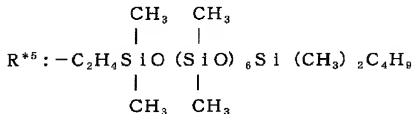
[0048]

0.3g of IPA solutions of 500g, IPA500g, and chloroplatinic acid 0.5 mass % were taught to another reactor for glycerin monoallyl ether, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 4 expressed with average composition formula $\text{M}_2\text{D}^{\text{R}^*5}_3\text{D}^{\text{R}^*6}_5$ was obtained.

R^*5 and R^*6 are shown below among a formula.

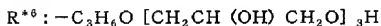
[0049]

[Formula 15]



[0050]

[Formula 16]



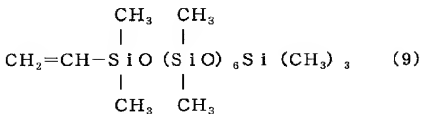
[0051]

Synthetic example 5 polyhydric-alcohol denaturation silicone 5

120 g of methyl hydrogen polysiloxane expressed with a reactor by average composition formula $\text{M}_2\text{D}_{42}\text{H}_5$ is taught, The mixture of the toluene solution 0.2g of 95 g of organopolysiloxane shown in the following average composition formula (9) and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained.

[0052]

[Formula 17]



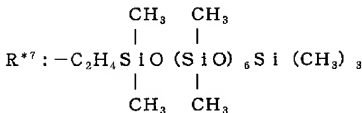
[0053]

28g of triglycerol monoallyl ether and 0.3g of IPA solutions of IPA200g and chloroplatinic acid 0.5 mass % were taught to another reactor, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 5 expressed with average composition formula $\text{M}_2\text{D}_{42}\text{B}^{\text{R}^{*7}}_3\text{D}^{\text{R}^{*6}}_2$ was obtained.

inside of formula, and R^{*6} -- the above -- the same -- R^{*7} is shown below.

[0054]

[Formula 18]



[0055]

Synthetic example 6 polyhydric-alcohol denaturation silicone 6

120 g of lauryl group content methyl hydrogen polysiloxane expressed with a reactor by average composition formula $\text{M}_2\text{D}^{\text{R}^{*8}}_{10}\text{D}_{40}\text{H}_4$ ($\text{R}^{*8}=\text{C}_{12}\text{H}_{25}$ is shown here) is taught, The mixture of the toluene solution 0.2g of 22 g of organopolysiloxane shown in the above-mentioned average composition formula (9) and chloroplatinic acid 0.5 mass % was dropped, it stirred under the room temperature, and the branching polysiloxane was obtained.

15g of triglycerol monoallyl ether and 0.3g of IPA solutions of IPA200g and chloroplatinic acid 0.5 mass % were taught to another reactor, and the branching polysiloxane compounded previously was dropped under solvent flowing back. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 6 expressed with average composition formula $\text{M}_2\text{D}^{\text{R}^{*8}}_{10}\text{D}_{40}\text{D}^{\text{R}^{*7}}_2\text{D}^{\text{R}^{*6}}_2$ was obtained.

R^{*6} , R^{*7} , and R^{*8} are the same as the above among a formula.

[0056]

Synthetic example 7 polyhydric-alcohol denaturation silicone 7

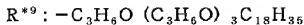
110 g of methyl hydrogen polysiloxane by which average composition formula $\text{M}_2\text{D}_{40}\text{H}_8$ front is carried out to a reactor is taught, The mixture of 60 g of organopolysiloxane of

said average composition formula (8) and the toluene solution 0.2g of chloroplatinic acid 0.5 mass % was dropped, and it was made to react at 80 °C for 3 hours. Subsequently, it was made to react by adding 48 g of oleyl polyoxypropylene (3) allyl ether (RG-1252; made by a Japanese emulsifier company), and carrying out inspection-of-troops flowing back for 3 hours. 30 g of triglycerol monoallyl ether was added, and it was made to react at 80 °C for 3 hours. By heating under decompression of a reactant and distilling out a solvent, the polyhydric alcohol denaturation silicone 7 expressed with average composition formula $M_2D_{40}D^{R^{*5}}_2D^{R^{*4}}_2D^{R^{*9}}_3$ was obtained.

the inside of a formula, R^{*4} , and R^{*5} -- the above -- the same -- R^{*9} is shown below.

[0057]

[Formula 19]



[0058]

Example 1 Silicone branch-type dimethicone surface treatment particulate titanium oxide
In 100 g of IPA solution (IPA/water = 9/1), 5 g of triethoxy silyl ethyl polydimethylsiloxethyl dimethicone (KF-9908; made by Shin-Etsu Chemical Co., Ltd.), After it added the particle oxidation titanium oxide 95g and Despa distributed, it extended uniformly on the tray, it dried at 120 °C for 2 hours, and IPA was removed. It ground after that and silicone branch-type dimethicone surface treatment particulate titanium oxide was obtained.

[0059]

Example 2 Acrylic silicone graft polymer surface treatment particulate titanium oxide
Instead of triethoxy silyl ethyl polydimethylsiloxethyl dimethicone (KF-9908; made by Shin-Etsu Chemical Co., Ltd.), Except using AKURIRETSU / tridecyl acrylate / triethoxy silyl propyl methacrylate / dimethicone methacrylate copolymer (KP-574; made by Shin-Etsu Chemical Co., Ltd.), The same operation as Example 1 was performed, and acrylic silicone graft polymer surface treatment particulate titanium oxide was obtained.

[0060]

Example 3 Silicone branch-type hexyl denaturation silicone surface treatment titanium oxide

30 g of triethoxy silyl ECHIRUPORIJIMECHIRU siloxy ethylhexyl dimethicone (KF-9909; made by Shin-Etsu Chemical Co., Ltd.) is added to 30 g of IPA solution (IPA/water = 9/1), it stirs uniformly, and a finishing agent solution is prepared. Teaching the titanium oxide 970g to a Henschel mixer, and stirring it, spray spraying of the surface treatment solution is carried out, and it mixes. It extended uniformly on the tray after that, and it dried at 120 °C for 2 hours, IPA was removed and ground, and silicone branch-type hexyl denaturation silicone surface treatment titanium oxide was obtained.

[0061]

Example 4 Silicone branch-type hexyl denaturation silicone surface treatment yellow oxide of iron

Except using yellow oxide of iron instead of titanium oxide, the same operation as Example 3 was performed, and silicone branch-type hexyl denaturation silicone surface treatment yellow oxide of iron was obtained.

[0062]

Example 5 Silicone branch-type hexyl denaturation silicone surface treatment red ochre
Except using red ochre instead of titanium oxide, the same operation as Example 3 was performed, and silicone branch-type hexyl denaturation silicone surface treatment red ochre was obtained.

[0063]

Example 6 Silicone branch-type hexyl denaturation silicone surface treatment black oxide of iron

Except using black oxide of iron instead of titanium oxide, the same operation as Example 3 was performed, and silicone branch-type hexyl denaturation silicone surface treatment black oxide of iron was obtained.

[0064]

Example 7 Silicone branch-type hexyl denaturation silicone surface treatment sericite
Except using a sericite instead of titanium oxide, the same operation as Example 3 was performed, and the silicone branch-type hexyl denaturation silicone surface treatment sericite was obtained.

[0065]

Example 8 Silicone branch-type dimethicone surface treatment granular material
5 g of triethoxy silyl ethyl polydimethylsiloxethyl dimethicone (KF-9908; made by Shin-Etsu Chemical Co., Ltd.) is dissolved in 10 g of IPA solution (IPA/water = 9/1), and a finishing agent solution is prepared. Next, by a mixer, after mixing, a surface treatment solution is added and 20 g of mica, the talc 10g, the nylon powder 10g, red 226 No. 2g, and the red ochre 3g are fully mixed. Then, it extended uniformly on the tray, it dried at 120 °C for 2 hours, IPA was removed and ground, and the silicone surface treatment granular material was obtained.

[0066]

Example 9 Acrylic silicone graft copolymer surface treatment granular material
1 g of AKURIRETSU / tridecyl acrylate / triethoxy silyl propyl methacrylate / dimethicone methacrylate copolymers (KP-574; made by Shin-Etsu Chemical Co., Ltd.) are dissolved in 10 g of IPA solution (IPA/water = 9/1), and a finishing agent solution is prepared. Next, by a mixer, after mixing, a surface treatment solution is added and red 202 No. 30g, red 226 No. 10g, the titanium oxide 5g, and the black oxide of iron 0.5g are fully mixed. Then, it extended uniformly on the tray, and it dried at 120 °C for 2 hours, IPA was removed and ground, and the acrylic silicone graft polymer surface coating granular material was obtained.

[0067]

Examples 10-11 and the comparative example 1 - 2 W/O type Sun Katt milky lotion (registered trademark)

The W/O type Sun Katt milky lotion (registered trademark) shown in the next table 1 was manufactured, and the using feeling, usability, and the ultraviolet-rays cut effect were evaluated from the following method. The result is also collectively shown in Table 2.

[0068]

[Table 1]

成分	(%)			
	実施例		比較例	
	10	11	1	2
1 デカメチルシクロペンタシロキサン	20	20	20	20
2 ジメチルポリシロキサン * 1	5	5	5	5
3 ポリエーテル変性シリコーン * 2	—	—	—	3
4 多価アルコール変性シリコーン6(合成例6)	3	3	3	—
5 パラメキシケイ皮酸オクチル	5	5	5	5
6 表面被覆微粒子酸化チタン(実施例1)	3	—	—	—
7 表面被覆微粒子酸化チタン(実施例2)	—	3	—	—
8 メチルハイドロジェン表面処理微粒子酸化チタン	—	—	3	3
9 エタノール	10	10	10	10
10 1, 3-ブチレングリコール	5	5	5	5
11 球状ナイロンパウダー	2	2	2	2
12 防腐剤	適量	適量	適量	適量
13 香料	適量	適量	適量	適量
14 精製水	残量	残量	残量	残量
(評価項目)				
使用時の肌へののび広がり	◎	◎	×	×
肌への密着感	◎	◎	×	×
自然な仕上がり	◎	◎	×	×
しっとり感	◎	◎	△	×
化粧もち	◎	◎	×	×
紫外線カット効果(SPF測定値)	17	18	12	10

[0069]

*1: KF-96A-6cs (made by Shin-Etsu Chemical Co., Ltd.)

*2: KF-6017 (made by Shin-Etsu Chemical Co., Ltd.)

[0070]

(Manufacturing method)

A: Mix the ingredients 1-4, add the ingredients 6-8, and distribute uniformly by bead mill processing.

B: Add the ingredient 5 to A and carry out mixture dispersion to it uniformly.

C: Mix uniformly the ingredients 9-10 and the ingredients 12-14.

D: A was added to B, and after emulsification, the ingredient 11 was added, it mixed uniformly, and the W/O type Sun Katt milky lotion (registered trademark) was obtained.

[0071]

(Valuation method 1: Usability, using feeling)

doing a use test by 20 women's special panel -- the mileage breadth to the skin at the time of use, and a fitting feeling -- natural -- it was finished, and gently, the following standards estimated and admiration and makeup rice cake were judged by the average

mark.

[Valuation basis]

Five points: Dramatically good

Four points: Good

Three points : usually

Two points: Slightly poor

One point: Defect

[Judgment]

O : the 4.5 or more average mark

O : the less than 4.5 or more 3.5 average mark

**: The less than 3.5 or more 2.5 average mark

x: The less than 2.5 average mark

[0072]

(Valuation method 2: The ultraviolet-rays cut effect)

The W/O type Sun Katt milky lotion of Examples 10-11 and the comparative examples 1-2 was applied to the quartz glass plate so that it might be set to 50 mg per 50-cm², and the sun protection factor of in vitro was measured in SPF290-ANALYZER (made by Optometrics) after desiccation.

[0073]

The Sun Katt milky lotion (registered trademark) of this invention was excellent in a using feeling, usability, and the ultraviolet-rays cut effect so that clearly from the result of Table 1.

[0074]

Examples 12-13 and comparative example 3-4 powder foundation

The powder foundation shown in the next table 2 was manufactured, and the using feeling and usability were evaluated from the following method. The result is also collectively shown in Table 2.

[0075]

[Table 2]

	成分	(%)			
		実施例		比較例	
		12	13	3	4
1	シリコン分岐型ヘキシル変性シリコン表面処理酸化チタン(実施例3)	12	—	—	—
2	シリコン分岐型ヘキシル変性シリコン表面処理黄酸化鉄(実施例4)	2.9	2.9	—	—
3	シリコン分岐型ヘキシル変性シリコン表面処理ベンガラ(実施例5)	0.9	0.9	—	—
4	シリコン分岐型ヘキシル変性シリコン表面処理黒酸化鉄(実施例6)	0.4	0.4	—	—
5	シリコン分岐型ヘキシル変性シリコン表面処理セリサイト(実施例7)	40	—	—	—
6	カプリリルシラン表面処理酸化チタン * 3	—	12	—	—
7	カプリリルシラン表面処理セリサイト * 4	—	40	—	—
8	カプリリルシラン表面処理タルク * 5	—	残量	—	—
9	メチルハイドロジェン処理酸化チタン	—	—	12	12
10	メチルハイドロジェン処理黄酸化鉄	—	—	2.9	2.9
11	メチルハイドロジェン処理ベンガラ	—	—	0.9	0.9
12	メチルハイドロジェン処理黒酸化鉄	—	—	0.4	0.4
13	メチルハイドロジェン処理セリサイト	—	—	40	40
14	タルク	残量	—	残量	残量
15	ジメチルポリシロキサン * 6	3	3	3	4
16	多価アルコール変性シリコン3(合成例3)	2	—	—	—
17	多価アルコール変性シリコン4(合成例4)	—	2	2	—
18	2-エチルヘキサン酸セチル	3	3	3	4
19	防腐剤	適量	適量	適量	適量
20	香料	適量	適量	適量	適量
(評価項目)					
使用時の肌へののび広がり		◎	◎	×	×
肌への密着感		◎	◎	×	×
自然な仕上がり		◎	◎	×	×
しっとり感		◎	◎	○	×
化粧もち		◎	◎	△	×

[0076]

*3: OTS-2 Titanium CR-50 (made by the Daito Chemical Industry company)

*4: OTS-2 Sericite FSE (made by the Daito Chemical Industry company)

*5: OTS-2 Talc JA-46R (made by the Daito Chemical Industry company)

*6: KF-96A-20cs (made by Shin-Etsu Chemical Co., Ltd.)

[0077]

(Manufacturing method)

A: Mix the ingredients 15-20 uniformly.

B: Add A and mix uniformly, after mixing the ingredients 1-14.

C: Press molding of the B was carried out to the metal dish, and powder foundation was

obtained.

[0078]

(Valuation basis)

The use test was done by 20 women's special panel, the mileage breadth to the skin at the time of use, the fitting feeling, the natural result, and the above-mentioned standard [rice cake / admiration and / makeup] gently estimated, and it judged by the average mark.

[0079]

The powder foundation of this invention was excellent in a using feeling and usability so that clearly from the result of Table 2.

[0080]

実施例 14 リップスティック

(成分)	(%)
1. パラフィンワックス	12.0
2. ワセリン	12.0
3. キャンデリラワックス	3.0
4. カオリン	10.0
5. ヒマシ油	残量
6. ジメチルポリシロキサン*7	10.0
7. 多価アルコール変性シリコーン5 (合成例5)	2.5
8. アクリル-シリコーングラフト共重合体 表面処理粉体 (実施例9)	7.0
9. 香料	適量

*7: KF-96A-10cs (信越化学工業社製)

[0081]

(Manufacturing method)

A: Carry out the heating and dissolving of the ingredients 1-7, and mix.

B: Add the ingredient 9 and mix, after adding the ingredient 8 to A and mixing uniformly.

C: Fill up B with 80 ** into a capsule, and obtain a lipstick.

the lipstick of this invention article being smooth, and its mileage breadth being also light, and excelling in adhesion -- the beauty of a result -- it excelled in continuation of admiration, and the goodness of makeup **** gently.

[0082]

実施例 15 ほほ紅

(成分)	(%)
1. キャンデリラワックス	5. 0
2. マイクロクリスタリンワックス	5. 0
3. ビーズワックス	5. 0
4. 多価アルコール変性シリコーン7 (合成例7)	10. 0
5. トリイソオクタン酸グリセリル	7. 0
6. 流動パラフィン	残量
7. ロジン酸ペンタエリスリトール	2. 0
8. デカメチルシクロペンタシロキサン	15. 0
9. シリコーン分岐型ジメチコン表面処理粉体	
(実施例8)	35. 0
10. 防腐剤	適量
11. 香料	適量

[0083]

(Manufacturing method)

A: the ingredients 1-6 -- warming -- dissolve.

B: Add the ingredients 7-11 to A, and carry out mixture dispersion to it uniformly.

C: B was filled up with 80 ** into the metal dish, it cooled, and cheek red was obtained.

The cheek red of this invention was excellent in the mileage breadth to the skin at the time of use, and the fitting feeling to skin, and admiration continued gently by the natural result and it was excellent in makeup rice cake.

[0084]

実施例 16 アイライナー

(成分)	(%)
1. ミツロウ	5.0
2. セタノール	0.5
3. ステアリン酸	1.0
4. 多価アルコール変性シリコーン6 (合成例6)	0.5
5. モノオレイン酸ポリオキシエチレン (20) ソルビタン	1.0
6. レシチン	0.1
7. トリイソオクタン酸グリセリル	2.0
8. シリコーン分岐型ヘキシル変性シリコーン表面処理 黒酸化鉄 (実施例6)	10.0
9. シリコーン分岐型ヘキシル変性シリコーン表面処理 酸化チタン (実施例3)	0.5
10. トリエタノールアミン	1.0
11. 1, 3-ブチレングリコール	7.0
12. 酢酸ビニルエマルションポリマー	10.0
13. 防腐剤	適量
14. 精製水	残量
15. 香料	適量

[0085]

(Manufacturing method)

A: the ingredients 1-7 -- warming -- add the ingredients 8-9 after the dissolution, and mix uniformly.

B: Mix the ingredients 10-15 uniformly.

C: Add and emulsify B to A.

D: The container was filled up with C and the eyeliner was obtained.

The eyeliner of this invention tended to draw a light uniform line at the time of use, and was excellent also in makeup rice cake.

[0086]

実施例 17 O/W型化粧下地用サンカット乳液

(成分)	(%)
1. ステアリン酸	1.0
2. セタノール	0.5
3. 多価アルコール変性シリコーン2 (合成例2)	0.5
4. セスキオレイン酸ソルピタン	1.0
5. ジメチルポリシロキサン*9	5.0
6. トリイソオクタン酸グリセリル	10.0
7. 1、3-ブチレングリコール	10.0
8. グリセリン	3.0
9. ポリアクリル酸アミド混合乳化液*10	3.0
10. 防腐剤	適量
11. 精製水	残量
12. フェニル変性シリコーン複合粉体*11	2.0
13. シリコーン分岐型ジメチコン表面処理 微粒子酸化チタン (実施例1)	5.0
14. 香料	適量
*9:KF-96A-6cs (信越化学工業社製)	
*10:セビゲル305 (SEPIC社製)	
*11:KSP-300 (信越化学工業社製)	

[0087]

(Manufacturing method)

A: After heating and dissolving, add the ingredients 12-13 and Despa distributes the ingredients 1-6.

B: Add and emulsify A after carrying out the heating and dissolving of the ingredients 7-11.

C: Add the ingredient 14 to B and obtain the Sun Katt milky lotion for O/W type makeup base.

The Sun Katt milky lotion for O/W type makeup base of this invention was excellent in the mileage breadth to the skin at the time of use, and a natural result, and admiration continued gently and it was excellent in a fitting feeling, a beautiful result, makeup rice cake, and the ultraviolet-rays cut effect when foundation was applied on it.

[0088]

実施例 18 粉白粉

(成分)	(%)
1. シリコーン分岐型ヘキシル変性シリコーン表面処理セリサイト (実施例 7)	25.0
2. シリコーン分岐型ヘキシル変性シリコーン表面処理酸化チタン (実施例 3)	2.0
3. シリコーン分岐型ヘキシル変性シリコーン表面処理微粒子酸化チタン (実施例 2)	2.0
4. パーフルオロアルキルシラン表面処理タルク * 12	残量
5. 窒化ホウ素	10.0
6. シリコーン複合粉体 * 13	2.0
7. シリカ処理無水ケイ酸	0.2
8. パーフルオロポリエーテル * 14	3.0
9. 多価アルコール変性シリコーン 1 (合成例 1)	1.0
10. ジメチルポリシロキサン * 15	2.0
11. 香料	適量
* 12 : NF I タルク (三好化成社製)	
* 13 : KSP-100 (信越化学工業社製)	
* 14 : フォンブリン HC/04 (アウシモント社製)	
* 15 : KF-96A-20cs (信越化学工業社製)	

[0089]

(Manufacturing method)

A: Mix the ingredients 1-7 uniformly.

B: Mix the ingredients 8-10 uniformly and, in addition to A, mix uniformly.

C: B was ground and face powder was obtained.

The face powder of this invention has a smooth feel at the time of use, and is excellent in the adhesion to skin, and there are few powder jumps and they are excellent in continuation of admiration, and makeup **** gently.

[0090]

[Effect of the Invention]

The cosmetics of this invention are excellent in the dispersibility of a granular material, and dispersion stability and its water repellence are good, they are not condensation of a granular material, or with nonuniformity, and skin familiarity is excellent in the using

feeling and makeup lasting property which are improved gently.

[Translation done.]